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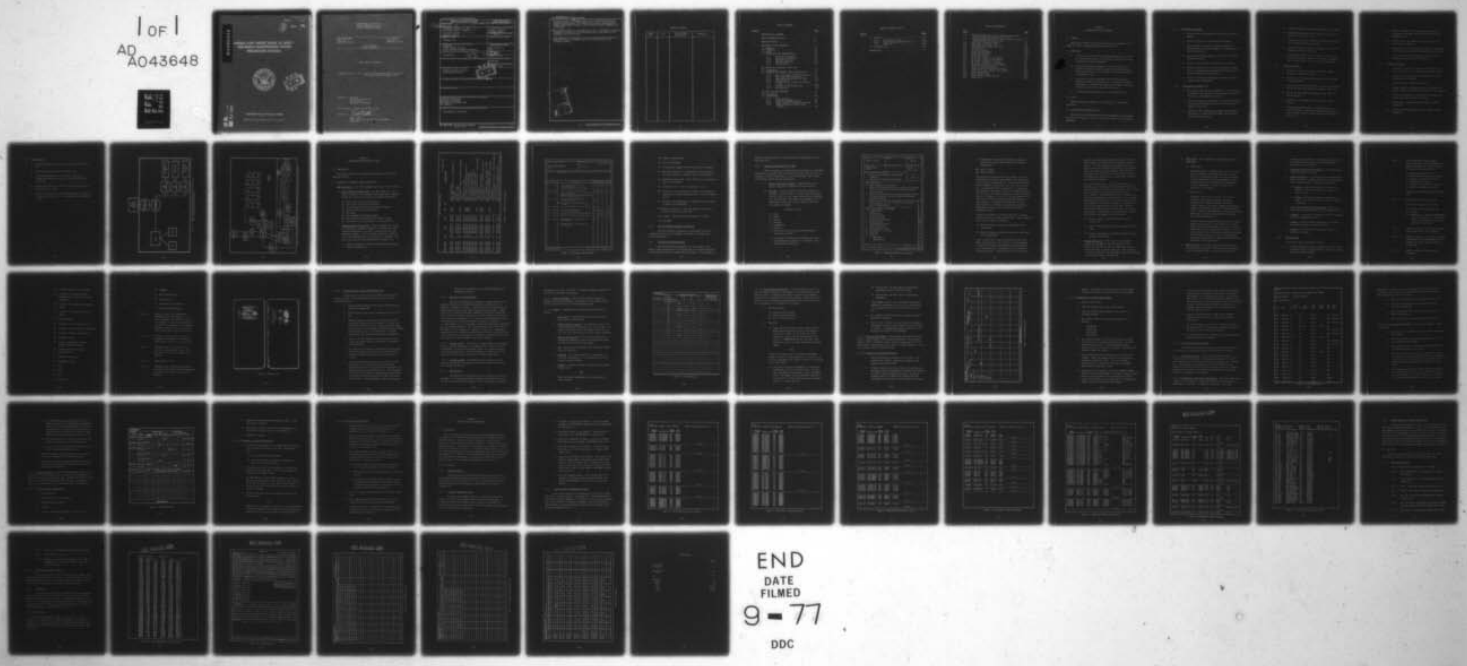

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MOBILE ASW TARGET MARK 30 MOD 1 PREVENTIVE MAINTENANCE SYSTEM PROCEDURES MANUAL

NAVTORPSTA Keyport, Washington 98345

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NAVTORPSTA Report No. 1341 Mobile ASW Target Mark 30 Mod 1 Preventive Maintenance System Procedures Manual

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Kitsap Facility
Silverdale, Washington

Prepared Under: Target Mark 30 Mod 1 Funds

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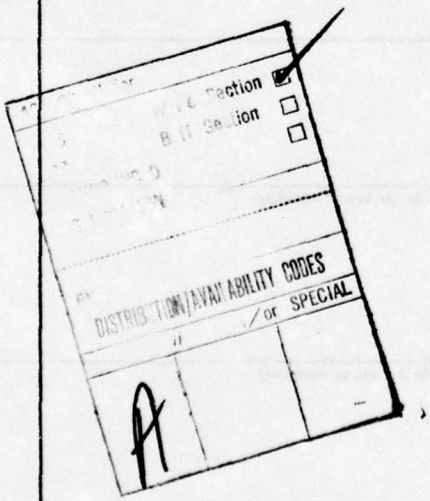
THE INTERRELATIONSHIP OF THE TARGET MARK 30 MOD 1 MAINTENANCE MANAGEMENT HIERARCHY IS PRESENTED AND THE RESPONSIBILITES OF EACH MEMBER OF THE MAINTENANCE TEAM ARE OUTLINED.

DATA GATHERING AND MAINTENANCE SCHEDULING TECHNIQUES ARE DISCUSSED AND DETAILED EXAMPLES ARE PRESENTED AS AN AID IN THE CONDUCT OF THE MAINTENANCE EFFORT.



RECORD OF CHANGES

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SECTION 1
MAINTENANCE SYSTEM MANAGEMENT

1.1 PURPOSE

This manual contains the detailed procedures for management of the Target Mk 30 Mod 1 Preventive Maintenance System (PMS).

1.2 OBJECTIVES

- To increase system worth by improving operational availability and reducing maintenance costs through a comprehensive system of planned maintenance management.
- To reduce unscheduled maintenance costs by utilization of uniform maintenance procedures optimized through continuing engineering evaluation and refinement of periodicity and scope of maintenance tasks.
- To provide supervisory personnel with workload scheduling standards necessary for efficient use of manpower, facilities, and equipment to maintain the high level of target availability required to achieve fleet support mission goals.
- To improve the quantity and quality of maintenance data.

1.3 SCOPE

These procedures are applicable to all Mk 30 Mod 1 maintenance activities.

1.4 ORGANIZATION AND RESPONSIBILITY

The functional relationships required for management of the program are depicted in Figures 1-1 and 1-2, and are discussed in the following paragraphs.

1.4.1 Maintenance Management

a. Exercises technical management of preventive maintenance program

b. Monitors performance of maintenance requirements

c. Acts as chairman of periodic planning meetings with Shop Supervisors, Logistic Management, QA Representatives and PMS coordinators

d. Briefs Program Manager regularly on status of preventive maintenance program

e. Provides policy guidance for maintenance activities

f. Monitors maintenance and equipment performance feedback data to evaluate maintenance program effectiveness and to validate maintenance task periodicity

g. Publishes and revises maintenance procedures required to support mission requirements

1.4.2 Maintenance Coordinator (MC)

a. Collaborates with logistics management in the development of methods to improve supply system support of spare and repair parts for maintenance activities

b. Advises and assists shop supervisors in matters concerning the preventive maintenance program and informs them of changes as they occur

c. Ensures that PMS documentation packages are procured and distributed to Intermediate Maintenance Activity (IMA) and other using activities

d. Operates maintenance data collection system at the depot

e. Maintains master preventive maintenance status control card file at the depot level

f. Prepares master cycle and quarterly maintenance schedules for Maintenance Management approval

g. Coordinates required changes or modifications to the PMS schedules with PMS Coordinators

h. Prepares Master PMS Schedule (Figure 2-8) from PMS Data Cards and distributes schedule to Maintenance Management and telecopies master schedule to IMA PMS Coordinator

1.4.3 IMA/PMS Coordinator

a. Performs as on-site maintenance coordinator between Maintenance Management and IMA

b. Coordinates with Maintenance Coordinator on all IMA/PMS change requirements

c. Advises and assists Shop Supervisor in matters concerning the PMS and keeps him informed of changes as they occur

d. Ensures that Maintenance Requirements Cards (MRCs) at IMA are current

e. Ensures that the IMA/PMS Work Center record is kept current

f. Utilizes Master PMS Schedule to prepare weekly work center maintenance schedule for shop supervisors approval and subsequently delivers weekly schedule and PMS data cards to him

g. Collects in-water run data required for situational maintenance requirements scheduling and maintains PMS component logs

h. Sends a copy of all component logs to MC at the end of each month by telecopier

i. Prepares target run configuration listings for submittal to Performance Analysis and Reliability Reporting (PARR)

j. Files all completed and rescheduled PMS Data Cards and telecopies updated Master PMS Schedule to MC

1.4.4 IMA Shop Supervisor

a. Supervises preparation of weekly schedules for IMA to ensure that they are in accordance with IMA/PMS schedule

b. Ensures that IMA/PMS schedule is updated to reflect PM accomplished or reschedule

c. Supports IMA/PMS Coordinator as required

d. Assigns preventive maintenance tasks in accordance with weekly schedule and issues PMS Data Cards to shop personnel

e. Verifies accomplishment of maintenance requirements and ensures that weekly schedule is updated

f. Reviews MRCs, recommends required changes to IMA/PMS Coordinator

g. Reviews and signs PMS data cards and forwards to PMS Coordinator

1.4.6 Shop Personnel

a. Perform assigned scheduled maintenance in accordance with MRC

b. Initials self check points on PMS data card

c. Submit PMS data cards for QA Inspector's approval at designated QA HOLD points shown in MRC and reflected on data cards

d. Signs, dates and turns in PMS data card to Shop Supervisor upon completion of MRC

e. Inform Shop Supervisor of problems encountered in performing preventive maintenance or of any suggestions for recommended changes

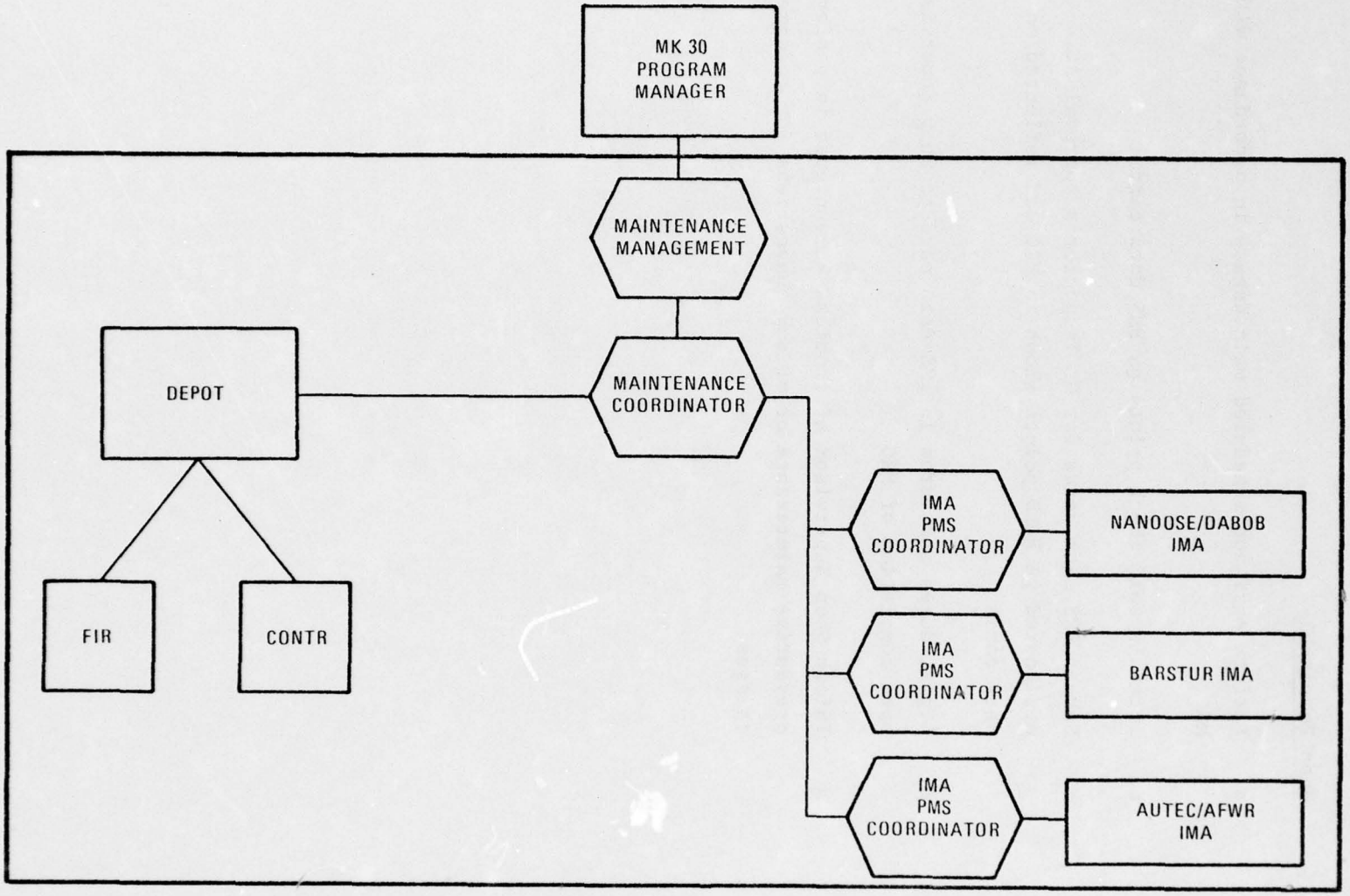


Figure 1–1. Mobile ASW Target MK 30 MOD 1 Preventive Maintenance System Organization and Responsibilities

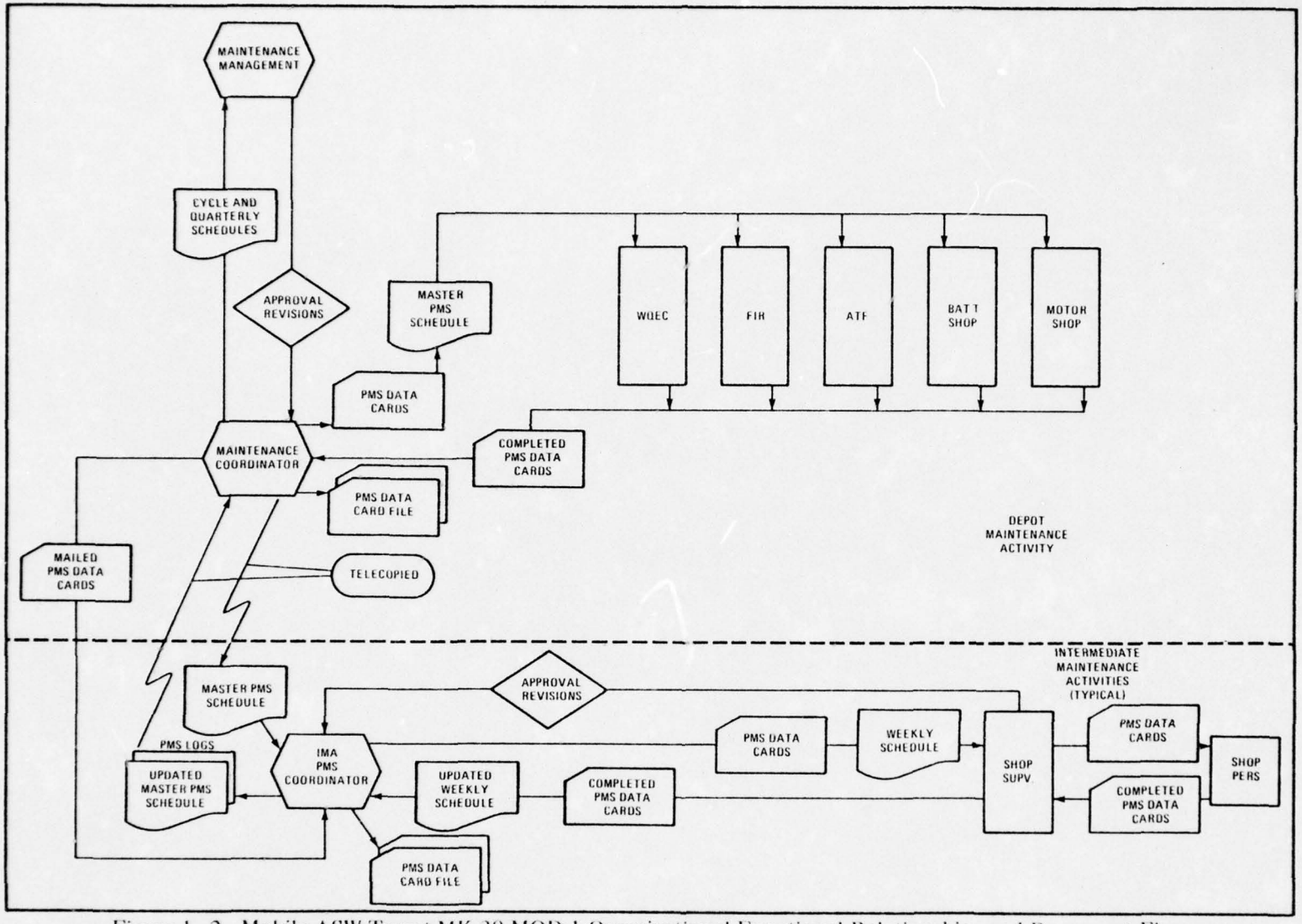


Figure 1–2. Mobile ASW Target MK 30 MOD 1 Organizational Functional Relationships and Document Flow

SECTION 2

THE PREVENTIVE MAINTENANCE SYSTEM

2.1 INTRODUCTION

This section describes the Preventive Maintenance System for the Target Mk 30 Mod 1.

2.2 PREVENTIVE MAINTENANCE SYSTEM DOCUMENTATION

PMS Documentation. The PMS Documentation consists of the following:

a. List of Effective Pages (LOEP) - The LOEP (Figure 2-1) provides a listing of the Maintenance Index Pages (MIPs) assigned to each work center and contains the following information:

(1) Report Date (date LOEP was produced)
(2) Work Center (listing of Work Centers)
(3) Location (where PM action is to be accomplished)
(4) MIP (Maintenance Index Page Number)
(5) MRC Number
(6) NTS (Assigned NTS procedure number)
(7) REV (Revisions indicating latest version of MIPs)
(8) Nomenclature (brief description of the requirement)

b. Maintenance Index Pages (MIPs) - MIPs are prepared and issued for each system, subsystem, assembly, or component for which scheduled maintenance is required. MIPs are the basic PMS reference documents. Each is an index listing of a complete set of MRCs applicable to a target section or component. The MIPs contain the following information (see Figure 2-2):

(1) System, Subsystem, or Component that maintenance requirements are applicable to

LIST OF EFFECTIVE PAGES

12 December 1976

WORK CENTER	LOC	MIP	MRC	NTS	REV	NOMENCLATURE
Target Shop	K/H	8A1-9617-2	8A1-M-2R	15470		Replace EOR Battery
Target Shop	K/H	8A1-9617-2	8A1-R-6	15471		Remove Nose & Acoustic Section Components - C&I Ports
Target Shop	K	8A1-9617-2	8A1-A-2			Ship Nose to ATF
Target Shop	K	8A1-9617-2	8A1-C-1			Ship Nose to MRF
Target Shop	K/H	8A3-9615-2	8A3-M-1	15479		Remove, Clean & Inspect & Reinstall Pressure Sensor
Target Shop	K	8A3-9615-2	8A3-C-1			Ship G&C Section to MRF
Target Shop	K/H	8A4-6047-0	8A4-S-1	15483		Clean Inspect & Test Transducer Section
Target Shop	K/H	8A4-6047-0	8A4-S-2	15484		Inspect & Cal Tonal Compensator
Target Shop	K/H	8A4-6047-0	8A4-A-1	15522		Remove & Reinstall LSG Reservoir
Target Shop	K	8A4-6047-0	8A4-A-2			Ship Transducer Section to ATF
Target Shop	K	8A4-6047-0	8A4-A-3			Ship LSG Pressure Reservoir to MRF
Target Shop	K	8A4-6047-0	8A4-C-1			Ship Transducer Section to MRF
Target Shop	K/H	8A5-6049-0	8A5-A-1	15490		Replace EOR Pressure Reservoir - Leak Test EOR Radio System
Target Shop	K/H	8A5-6049-0	8A5-A-2	15523		Inspect EOR Pressure Reservoir
Target Shop	K/H	8A5-6049-0	8A5-A-3R	15491		Remove Motor, Clean & Inspect Forward Tail, Install Motor
Target Shop	K/H	8A5-6049-0	8A5-R-2			Remove & Replace Motor. Ship Motor to MRF
Target Shop	K	8A5-6049-0	8A5-C-1			Ship Forward Tail Assembly to MRF
Target Shop	K/H	8A6-9610-1	8A6-S-2	15495		Clean and Inspect AFT Tail Section Assembly Components
Target Shop	K/H	8A6-9610-1	8A6-S-1R			Replace Shaft Bearing and Seal. Ship Shaft Bearing and Seal to MRF
Target Shop	K	8A6-9610-1	8A6-C-1			Ship Aft Tail Section Assembly to MRF
Target Shop	K	1A11-9609-0	1A11-S-1			Ship Towed Array to ATF For Acoustic Verification

Figure 2-1. LOEP (List of Effective Pages)

SYSTEM, SUBSYSTEM, OR COMPONENT	REFERENCE PUBLICATIONS	DATE
TARGET TORPEDO MARK 30 MOD 1 TRANSDUCER SECTION ASSEMBLY 8A4	NAVSEA OD 46289	10/5/76

CONFIGURATION THESE MAINTENANCE REQUIREMENTS ARE APPLICABLE TO EQUIPMENT IN WHICH THE FOLLOWING CHANGES HAVE BEEN ACCOMPLISHED

SYSCOM MRC CONTROL NO	MAINTENANCE REQUIREMENT	PERIODICITY CODE	SKILL LEVEL	MAN-HOURS	RELATED MAINTENANCE
8A4- 15483	1. Clean and Inspect Transducer Section Assembly Components. 2. Functional Test Transducer Section Assembly.	S-1	SL-II	9.0	None
8A4- 15484	1. Inspect and Calibrate Tonal Compensator.	S-2	SL-II	8.0	None
8A4- 15522	1. Remove LSG Pressure Reservoir (1A10), From Transducer Section (8A4). 2. Reinstall Certified Tested LSG Pressure Reservoir (1A10), In Transducer Section (9A4).	A-1	SL-II	2.0	S-1
8A4- SCHED	1. Ship Transducer Section Assembly to ATF for Acoustic Verification. NOTE: Verify MRC S-2 Has Been Accomplished Prior to Shipment.	A-2 **			S-2
8A4- SCHED	1. Ship LSG Pressure Reservoir to MRF for Renewal.	A-3 **			None
8A4- 15499	1. Inspect LSG Pressure Reservoir.	A-4	SL-II	1.0	None
8A4- 15526	1. Hydrostatic Pressure Test LSG Pressure Reservoir.	A-5	SL-II	1.0	None
8A4- 15527	1. Magnetic Particle Inspect LSG Pressure Reservoir.	A-6	SL-II	1.0	None
8A4- SCHED	1. Ship Transducer Section Assembly to MRF for Scheduled Renewal.	C-1 **			None
	** A management aid for scheduled purposes only. No MRC is provided.				

MAINTENANCE INDEX PAGE (MIP) OPNAV 4700.3(C) REV. 3-68 SYSCOM MIP CONTROL NUMBER 8A4-9612-1

Figure 2–2. Maintenance Index Page (MIP)

(2) Reference Publications

(3) Date of Development

(4) Configuration changes that have been made to equipment

(5) Reference Designator - An alphanumeric code identifying the target section or component that the MIP applies to

(6) Maintenance Requirement - Brief description of maintenance task to be performed

(7) Periodicity Code - Refer to Paragraph 2.2.3 b.

(8) Trade Level - The minimum skill level(s) of maintenance personnel performing maintenance task - Refer to Paragraph 2.2.3 d.

(9) Manhours - The average time per equipment, per man needed to perform the maintenance

(10) Related Maintenance - Other maintenance actions which should be done at the same time

(11) Location - Work Center where equipment is located

(12) MIP Number

2.2.1 Use of the Master IMA/PMS Documentation

The Master IMA/PMS Documentation is maintained by the PMS Coordinator and is used for planning, scheduling, and supervising required maintenance.

2.2.2 Work Center PMS Documentation

The Work Center PMS Documentation is that portion of the Master IMA/PMS Documentation that contains only the planned maintenance requirements applicable to a particular work center. It is designed to

provide a ready reference of planned maintenance requirements for the Shop Supervisor.

2.2.3 Maintenance Requirement Card (MRC)

MRCs (see Figure 2-3) provide detailed procedures for performing maintenance requirements and tells exactly who, what, how, and with what resources a specific requirement is to be accomplished. MRCs contain the following information and instructions:

a. System, Subsystem, Component - Identification of the System, Subsystem or component covered by the MRC

b. MRC Code - The code assigned to the MRC, consisting of two parts. The first part of the MRC Code corresponds to the first portion of the number identifying the applicable MIP; the second part identifies the periodicity for the maintenance action, with a letter code for repetitive time element as follows:

Periodicity Codes

D = Daily
W = Weekly
M = Monthly
Q = Quarterly
S = Semiannually
A = Annually
C = Cycle (once every five years unless otherwise specified on the MIP)

R = As Required (Maintenance requirements which are to be performed as indicated by a "situation" other than calendar periodicity)

SYSTEM	COMPONENT	MRC CODE
Target Mk 30 Mod 1		8A4 S-1

SUBSYSTEM	RELATED MAINTENANCE	RATES	M/H
Hull, Transducer Section		SL-II	
		SL-II	9.1

TOTAL M/H

ELAPSED TIME

MAINTENANCE REQUIREMENT DESCRIPTION

1. Clean and inspect Transducer Section Assembly Components.
2. Functional Test Transducer Section Assembly.

SAFETY PRECAUTIONS

1. Observe standard safety precautions.
2. Warning: Keep fingers and hands clear of vent hole in LSG pressure relief tool to prevent injury due to pressurized gas escaping through vent hole.
3. Warning: The LSG pressure system contains high pressure nitrogen. No attempt shall be made to loosen fittings before completely relieving the pressure.
4. Warning: Use care when removing components to prevent striking other components or the hull, this could result in injury to hands or equipment damage.

TOOLS, PARTS, MATERIALS, TEST EQUIPMENT

1. Standard Tool Kit
2. Universal Dolly
3. Kim Wipes or Kay Dry
4. Plastic Wiping Towels
5. Silicone Compound Mil-S-8660
6. Detergent Solution
7. Thread Compound Mil-T-5542
8. Loctite Primer Grade T
9. Locking Sealent Mil-S-8116
10. Zinc Chromate Putty Mil-P-8116
11. Teflon Tape
12. O-rings
    MS29513-252 (4)
    MS29513-260 (2)

PAGE 1 OF 13 | 2309 | 15483 | | | 8A4 | S-1

LOCATION	DATE
TARGET SHOP	NOV 01 1976

MAINTENANCE REQUIREMENT CARD MRC

Figure 2–3. Maintenance Requirement Card (MRC)

U = Unscheduled (Maintenance performed on equipment as directed on specific MRCs annotated "Unscheduled Maintenance")

18M = Each 18 months

xxM = Each xx months

The periodicity code also includes a number for specific identification when more than one MRC of the same periodicity exists in the same MRC set. In most cases the MRCs will be numbered consecutively, e.g., S-1, S-2, and S-3, etc. An existing MRC may be reapplied to a revised MIP even though the periodicity code of the reapplied MRC may not fall within the normally sequential numeric periodicity codes. For example, S-1, S-2, S-3, S-6 may appear on the MIP since S-6 was an existing MRC that was reapplied to this equipment. Technically valid MRCs will not be reprinted merely to change the periodicity code number. Nonsequential numbers will not affect scheduling or management control.

Situation requirements code may be used with a calendar periodicity code in certain circumstances. These situations fall within two general categories:

(1) When the situation governs the scheduling of the requirements

(2) When the calendar periodicity governs the scheduling of the requirement

First, consider the occasion of measuring values weekly when a certain system is in operation. The measurement of these values will not be required when the equipment is not being operated, regardless of how prolonged the idle period may be. A similar situation is the periodic

scheduling of maintenance during idle periods, while prolonged periods of operation will not require this maintenance. The cases described are examples of requirements that must be scheduled with regard to the situation rather than with the calendar timing. The periodicity code shall state the "R" for situation first, and after the hyphen and a unique number, a letter shall recognize the calendar contingency.

When the periodicity code is of the calendar-situation combination, the calendar controls the scheduling and is only occasionally overtaken by the situation. The calendar periodicity shall be referred to first in the code (e.g., 18M-2R). The 18M indicates that the longest time between accomplishment is every 18 months, and it should be scheduled thus; however, a situation could arise which would require it to be done more often. An explanation of such situations will appear on the MRC. When the situation no longer exists, scheduling reverts to the 18 month period. Some examples of the combination calendar and situation requirements are the following:

(1) (M-1R): Monthly or every 600 hours, whichever occurs first

(2) (W-3R): Weekly or after each use, whichever occurs first

(3) (S-1R): Semiannually or during each upkeep period, whichever occurs first

c. Related Maintenance - This item is for a listing of actions on other MRCs in the same set which can be efficiently done before, with, or immediately after an action described on the basic MRC; i.e., when equipment is opened, the MRC may list other MRCs having PMS procedures that should be done at the same time.

d. Skill Level - Skill requirements for performance of PMS maintenance.

(1) Skill Level I

Performs, generally under guidance, work of a routine nature requiring lesser skills than that of Skill Level II. Assists Skill Level II in the performance of their normal duties such as maintenance, repair, modification and test of components, subassemblies, or final assemblies. Is able to utilize basic meters and test equipment.

(2) Skill Level II

Thoroughly familiar with, and able to work from, preventive maintenance procedures, checklists, specifications, assembly drawings, blueprints, technical manuals, OPs, ODs or engineering directives. Conducts and performs inspections, tests and measurements. Accomplish modifications, preventive maintenance, overhauls, and repairs of equipment in accordance with established procedures.

Isolates causes of malfunctioning equipment by standard system test procedures, visual inspections, voltage checks, resistance measurements, and other tests using specialized test and measurement equipment in addition to all standard types of test and measurement equipment. Directly responsible for the quality of workmanship on complex system hardware. Makes required entries on Data Sheets and MRC Data Cards.

e. Manhours (M/H) - The average time per equipment needed to do the maintenance required. Total M/H and total elapsed time to the nearest tenth of an hour for each piece of

equipment are also listed. It does not include time for tool preparation and return and for removal and/or replacement of interference.

f. Maintenance Requirement Description - A brief definition of the PMS action to be done.

g. Safety Precautions - A listing of those precautions which direct attention to possible hazards to men or equipment while doing maintenance. Specific categories are:

(1) Warning: Operating procedures, practices, etc., which, if not correctly followed, may lead to injury or death

(2) Caution: Operating procedures, practices, etc., which, if not correctly followed, may cause damage to equipment

h. Tools, Parts, Materials, Test equipment - Those tools, parts and materials necessary for the maintenance action

i. Procedure - The sequence of detailed steps to be followed in doing the maintenance action

j. Comments - Specific comments appropriate to performing maintenance procedures covered by the MRC

k. Location - The work center (WC) and code where the equipment is located.

2.2.4 PMS Data Cards

The PMS Data Cards are prepared as follows:

a. Using the quarterly schedule requirements, the MC punches a PMS Data Card for each requirement. The card is divided into the following columns:

Col. 1. = CCN (Configuration Control Number).
Three digit number which corresponds to a Specific Component of a Section assembly. First digit denotes hull section.

1 = Nose Acoustic Hull Section
2 = Main Propulsion Battery Hull Section
3 = Guidance & Control Hull Section
4 = Transducer Hull Section
5 = Forward Tail Assembly Hull Section
6 = AFT Tail Assembly Hull Section

Towed Array Deployment Subsystem Assembly-1A11

Col. 2. = MRC (Maintenance Requirement Card)

Up to a six digit number: 8A1-M-2R

8A1 = Ref Des For Nose/Acoustic Hull
m = Monthly
2R = Periodicity - Situational Requirement: Either/or situation. In this case "Every Third In-Water run or 30 days whichever occurs first"

Col. 3. = Location of Hardware Upon which the Maintenance Requirement is to be performed

Col. 4. = Change of Location: i.e. a part is shipped to NAVTORPSTA from NAVTORPSTADET(H) due to failure, etc. before scheduled MRC was accomplished

Col. 5. = Status: condition of item at time of scheduling:

01 In Operational Use (in a vehicle)

02 In Stock ("A" condition without qualification - more than six months shelflife)

03 In Stock ("B" condition with qualification)

04 In Stock ("C" condition - priority issue)

05 Requires Testing

06 Repairable (does not require parts)

07 Repairable (requires parts of components)

08 Incomplete Assembly (missing parts)

09 Condemned (scrap)

10 In Stock (questionable contents, overage, unknown condition)

11 Field/Fleet Returns (awaiting classification)

12 Suspended (litigation)

13 Suspended (in work)

14 FIR

15 WQEC

16 ATF

17 Motor Shop

18 NORTHROP

19 Other Manufacturers

20 Lost (sunk, etc.)

21 Unserviceable (reclamation)

22 Special Testing (ATF etc.)

Col. 6. = Change of Status: When component's operational status is changed: i.e., a tonal compensator was code Ø1 (in vehicle, "A" condition) at time of scheduling but, before MRC was accomplished the compensator developed a leak and has to be repaired. Status change would change to possibly 07.

Col. 7. = Due Date: Monthly period during which component was scheduled for maintenance. Period ends at the last day of the month.

Col. 8. = Rescheduled Date: Projected date that item will be processed in future. Will not exceed one-half of the periodicity of the MRC.

Col. 9. = Serial number of item

Col. 10.= Completion Date: Maintenance Coordinator will punch in date that MRC was accomplished so that date will appear on Master PMS Schedule.

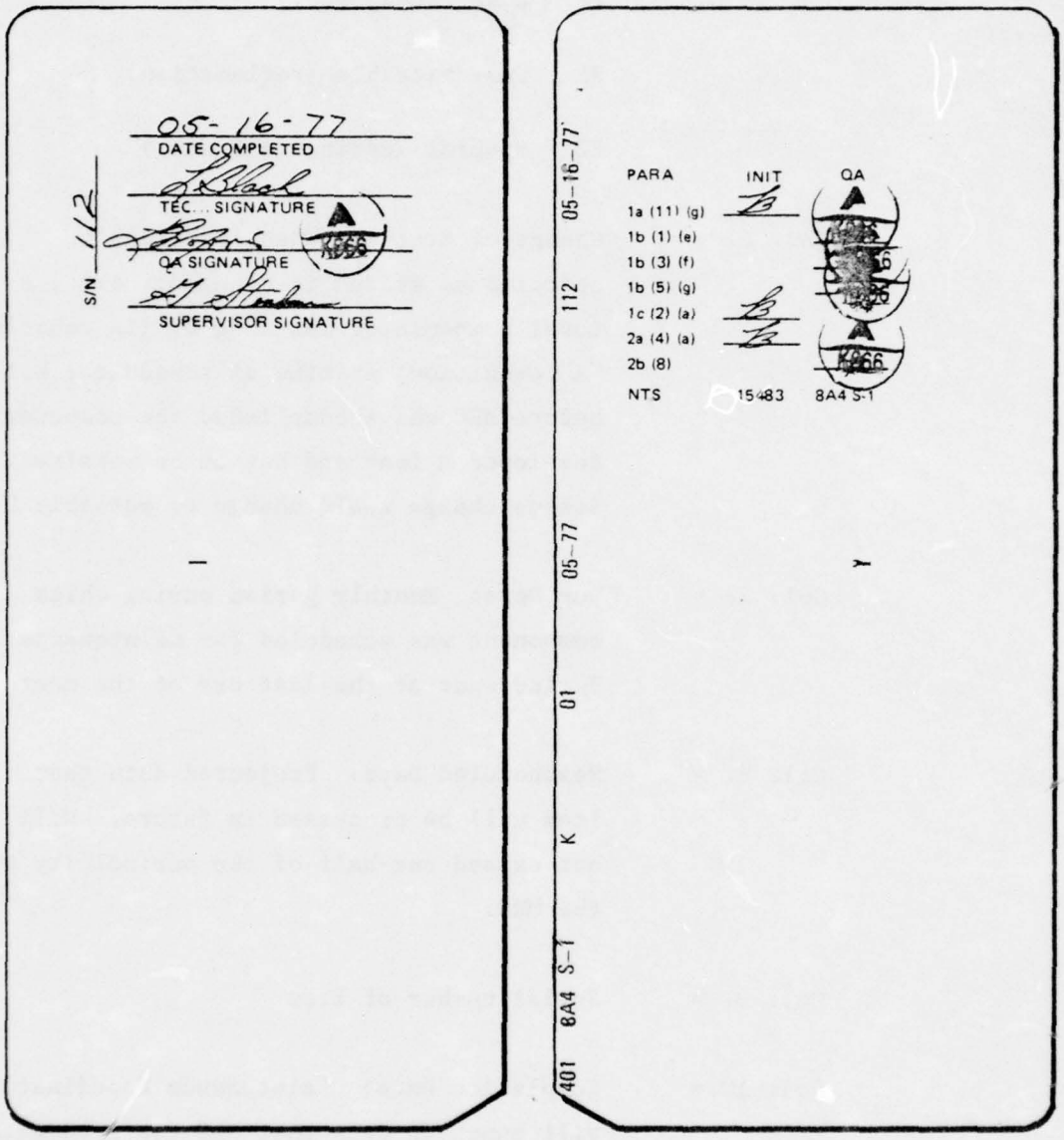


Figure 2–4. PMS Data Card

2.2.5 Location and Use of MRCs and PMS Data Cards

A complete set of current copies of MRCs will be located at the Work Center. Shop personnel will perform their duties in the following sequence:

a. Receive assigned PMS data card from the Shop Supervisor and obtain assigned MRC

b. Obtain required tools, parts and materials listed on the MRC

c. Perform maintenance requirement as stated on the MRC, initialling PMS data card (see Figure 2-4) at each self check point identified by SC_____ noted on the MRC margin and calling for a QA Inspector to observe the step performed and stamp the card at each QA HOLD noted on the MRC margin while observing safety precautions as indicated

d. Report to the Shop Supervisor any deficiencies or casualties discovered during the performance of the maintenance requirement

e. At completion of maintenance procedures, signs and dates, the PMS maintenance data card in the locations provided and has QA Inspector stamp the card in the location provided

f. Return completed PMS maintenance data card to the Shop Supervisor who will update the Weekly PMS Schedule. Maintenance actions not completed will be reported to the Shop Supervisor for rescheduling action. PMS maintenance actions will not be marked "completed" until deficiencies or casualties discovered during the planned maintenance are corrected. The Shop Supervisor signs the completed

PMS data card and returns it to the PMS Coordinator for subsequent processing.

2.2.6 Revision of PMS Documentation

Maintenance Management will immediately promulgate pen and ink changes correcting errors in PMS documentation affecting safety of personnel or damage to equipment. Note that pen and ink corrections are interim measures only for the above urgently required changes. Prompt action will be taken by Maintenance Management to provide revised MRCs with corrected or modified information to IMA PMS Coordinators who will distribute them as appropriate. If changes to the maintenance procedures or periodicity for a specific MRC appear necessary, or desirable, suggested changes are to be forwarded to Maintenance Management, NAVTORPSTA via the IMA PMS Coordinator. MRCs affected shall be fully identified by MIP number, system, subsystem or component and MRC code. Recommended changes should be as complete as possible and include all related information. Each IMA has the prerogative to temporarily increase the frequency of performance of specific MRCs to meet local conditions.

2.2.6.1 Changes to MRCs. Distribution of revised MRCs is the responsibility of the PMS Coordinator. The changes will be issued in the form of completely new MRCs which physically replace the earlier versions. It is the responsibility of the PMS Coordinator to insure that the MRC Manuals at the work center contain only the latest issued MRCs.

2.2.6.2 Preliminary MRCs. Preliminary MRCs are printed on yellow stock and provide new or changed procedures which have not been given final engineering approval.

2.2.7 PMS Schedules

PMS schedules are categorized as Cycle, Quarterly, Master PM, and Weekly. The Cycle and Quarterly schedules are maintained by the MC. From the Cycle and Quarterly schedules, the MC will prepare the Master

PMS Schedule for issue to each IMA. The Weekly schedule is generated at the IMA from the Master PMS schedule.

2.2.7.1 Cycle PMS Schedule. The Cycle PMS Schedule (Figure 2-5) displays the planned maintenance requirements to be performed during a specified 12-month period of five year overhaul cycle.

2.2.7.1.1 Content. Instructions for completing this schedule are as follows:

a. Work Center - The Work Center which is covered by the particular Cycle PMS Schedule

b. Schedule Quarter Starting - The semiannual, annual, and cycle requirements are scheduled into these columns. The number circled from 1-20 is the present quarter of the five year cycle (20 quarters) that the schedule represents

c. Approval Signature/Date - The supervisor responsible in Maintenance Management approves the schedule and enters the date that the schedule was prepared

d. MIP - Denotes MIP in MRC Manual that maintenance requirements are identified

e. Component - The System, Subsystem, or components for which PMS requirements are to be scheduled on the Cycle Schedule by serial number

f. Remarks - Pertinent information relating to that serial numbered item

NOTE

Daily and weekly requirements are scheduled only the weekly schedule.

CYCLE PMS SCHEDULE

NAVMAT 4790/1A (3-77)

MIP	WORK CENTER / COMPONENT	SCHEDULE QUARTER STARTING 1	2	3	4	APPROVAL SIGNATURES / DATE / EACH QUARTER
8A4-9612-1	TARGET SHOP	13	14	15	16	
		17	18	19	20	1 APRIL 1977
		9	10	11	12	
	TRANSDUCER SECTION					
	101	~~S-1~~		S-1		
	102		S-1		S-1	
	103	S-1		S-1		
	104	S-1 →	S-1	S-1		
	105		S-1		S-1	
	106	~~S-1~~		S-1		
	107		S-1		S-1	
	108	S-1		S-1		
	109		S-1		S-1	
	110	S-1		S-1		
	111		S-1		S-1	
	112	~~S-1~~		S-1		
	114		S-1		S-1	
	115	S-1		S-1		
	116		S-1		S-1	
	117	~~S-1~~		S-1		
	118		S-1		S-1	

Figure 2–5. Cycle PMS Schedule

2.2.7.1.2 Cycle Schedule Preparation. Cycle PMS schedules are used to plan and schedule maintenance requirements to be performed during each calendar quarter. Maintenance Management should devote considerable attention to the preparation of the cycle schedule. These efforts will directly affect the long-range PMS scheduling. The materials required and the procedures to be followed are as follows:

a. Required materials

(1) Master PMS Documentation
(2) Blank Cycle PMS schedules
(3) Data collection sources

b. Procedures

(1) Using the list of Effective Pages (LOEP) from the Master PMS Documentation, enter the MIP number in the far left column. On the first line of the "component" column enter the nomenclature of the item i.e., TRANSDUCER SECT and in the same column under that list all the items sequentially by serial number

NOTE

Pay particular attention to the "RELATED MAINTENANCE" column of the MIP. If any semiannual (s), annual (A), or cycle (C) requirements are related, then they are scheduled in the same column.

(2) From the MIP, list each semiannual (S) maintenance requirement in one of the four columns. Then this same requirement is rescheduled to occur six months later. For example, an S-1 requirement schedule to occur in the 1, 5, and 9 quarters is also scheduled in the 3, 7, and 11 quarters

(3) From the MIP, list each annual (A) maintenance requirement in one of the four columns

(4) From the MIP, list each cycle (C) maintenance requirement

c. "EACH QUARTER" Column: List all monthly and quarterly maintenance requirement (M-1, Q-1, etc.) and all situation requirements (M-1R, Q-1R, S-1R, A-1R, C-1R, R-1, etc.)

d. The completed Cycle PMS Schedule is signed and dated by Maintenance Management.

e. When the cycle schedule has been finished, maintenance requirements listed are not to be moved from one quarter to another. If rescheduling becomes necessary, it will be done on the Quarterly PMS Schedules.

2.2.7.2 Quarterly PMS Schedule. The Quarterly PMS Schedule, (Figure 2-6) is a visual display of all IMA/PMS requirements to be performed during a specific three-month period and will be maintained by the MC This schedule, when updated weekly, provides a ready reference to the MC of the current status of PM for all IMAs.

2.2.7.2.1 Content of Quarterly PMS Schedule.

a. Space is provided for entering the work center, year, current quarter number, supervisor's signature, date prepared, and months covered

b. Thirteen columns, one for each week in the quarter, are available to permit scheduling of maintenance requirements on a weekly basis throughout the quarter, as well as columns to enter the complete MIP codes and any PMS requirements that may need to be rescheduled in the next

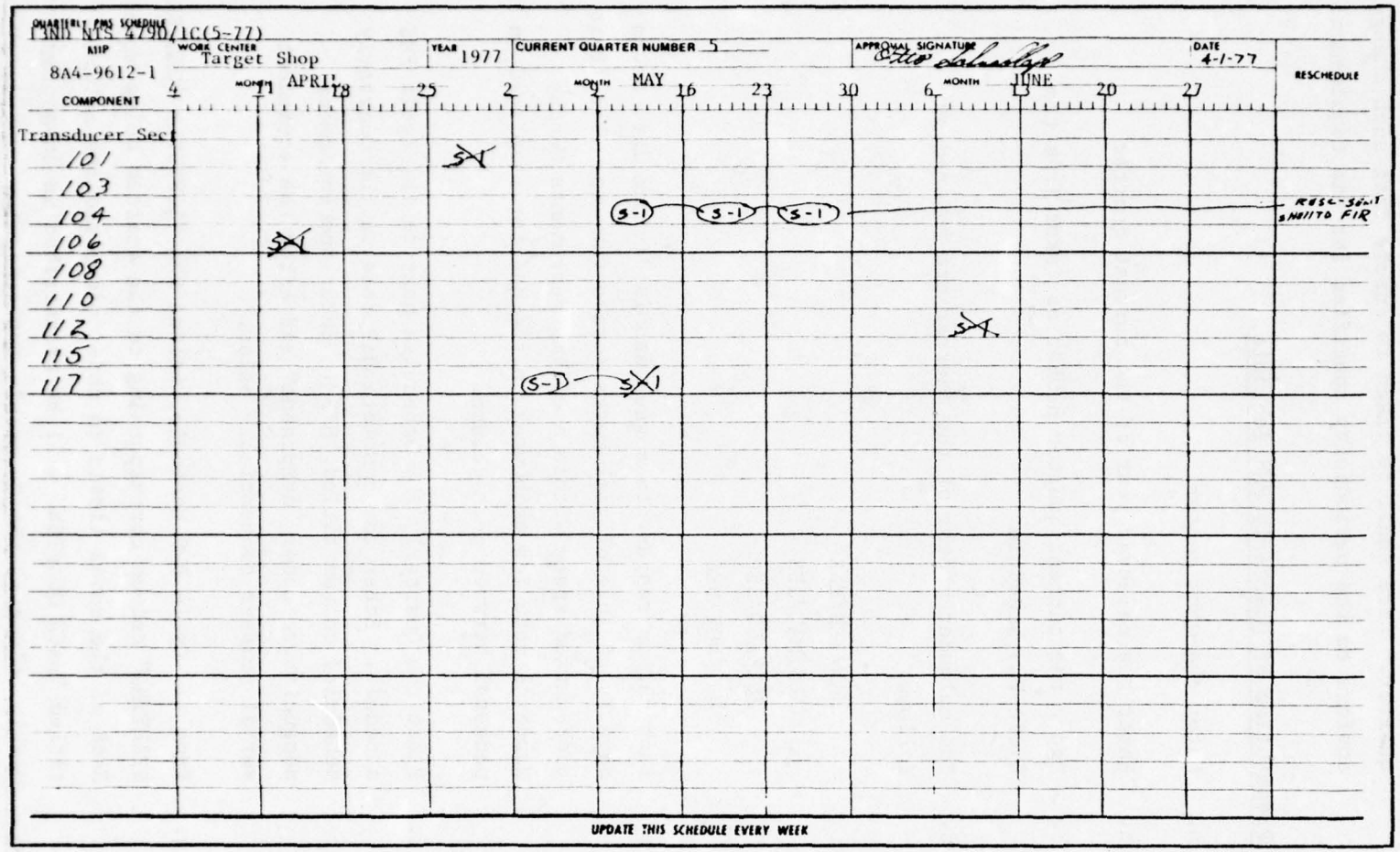


Figure 2–6. Quarterly PMS Schedule

quarter. Care shall be taken to ensure that such changes conform to the periodicity specified for the requirement.

2.2.7.2.2 Preparation of Quarterly PMS Schedule.

a. Enter the work center

b. Enter the calendar year of the current quarter

c. Enter the current quarter number as taken from the Cycle PMS schedule

d. The calendar months of the quarter are entered as follows:

JAN/FEB/MAR
APR/MAY/JUN
JUL/AUG/SEP
OCT/NOV/DEC

e. Each column represents a week and is divided into seven days by the use of tick marks across the top. The first tick-marked space within a column represents Monday. Monday's date for each week in the quarter is placed on the pedestal between each column.

f. Place the Quarterly PMS schedules next to the Cycle PMS schedule. Enter the complete MIP code in the Quarterly scheduled column titled "MIP". Enter the equipment nomenclature under "component" and enter the equipment serial numbers sequentially below.

g. From the Cycle PMS schedule, select the "SCHEDULE QUARTER STARTING" column corresponding to the quarter being scheduled. Each of the codes listed in this column and the column titled "EACH QUARTER" will be transcribed in an appropriate weekly column of the Quarterly PMS schedule.

h. From the Cycle PMS schedule column titled "EACH QUARTER", schedule monthly, quarterly and applicable situational requirements into the appropriate weeks of the Quarterly PMS schedule. All calendar situation requirements (cyclic, annual, semiannual, quarterly, monthly) must be accomplished at least once during the periodicity specified, and in addition, these requirements will be accomplished each time the situation arises.

i. From the Cycle PMS schedule column titled "SCHEDULE QUARTER STARTING" schedule the annual and semiannual requirements.

j. Any PMS requirements listed in the "RESCHEDULE" column of the previous Master PMS Schedules are brought forward to the Quarterly PMS schedule being prepared.

k. The completed Quarterly PMS schedule shall be signed and dated by Maintenance Management.

2.2.7.2.3 Use of Quarterly PMS Schedule

The Quarterly PMS Schedule serves as a directive to the MC for the preparation of the PMS Data Cards and the Master PMS Schedule.

2.2.7.3 Master PMS Schedule. The Master PMS Schedule (Figure 2-7) is a continuous 12-week schedule of maintenance requirements at the IMA. It is generated by the MC from the Quarterly PMS Schedule for a specific IMA. This schedule can be revised by the Shop Supervisor to best support the operational mission with the available resources. Special attention will be given the rescheduling or deferment of PM on items critical to performance of the target.

2.2.7.3.1 Preparation of the Master PMS Schedule. The Master PMS Schedule (Figure 2-7) is prepared by listing the PMS Data Cards for each IMA sequentially by due date. It serves as a directive to the Shop

Page 1

TARGET MK 30 MOD 1 MASTER P.M.S. SCHEDULE FOR KEYPORT

PERIOD FROM/TO 05-16-77/08-08-77

RPT DATE 06/14/77

CCN	MRC	LOC	CHG LOC	STAT	CHG STAT	DUE DATE	RESC DATE	SER NUM	COMP DATE
306	8A3-M-1	K		01		05-77		126	05-16-77
306	8A3-M-1	K		01		05-77		116	05-22-77
401	8A4-S-1	K		01		05-77		112	05-16-77
401	8A4-S-1	K		01	22	05-77	06-77	114	
402	8A4-S-2	K		01		05-77		026	05-12-77
402	8A4-S-2	K		01		05-77		025	04-04-77
501	8A5-A-3R	K	H	01		05-77	06-77	112	
306	8A3-M-1	K		01		06-77		126	06-02-77
306	8A3-M-1	K		01		06-77		125	06-11-77
306	8A3-M-1	K		01		06-77		116	
401	8A4-S-1	K		01		06-77	09-77	109	
306	8A3-M-1	K		01		07-77		126	
306	8A3-M-1	K		01		07-77		116	
401	8A4-S-1	K		01		07-77		110	
402	8A4-S-2	K		01		07-77		013	
412	8A4-A-1	K		01		07-77		108	
501	8A5-A-3R	K		01		07-77		110	
506	8A5-A-4R	K		01		07-77		7352-1	
306	8A3-M-1	K		01		08-77		126	

Figure 2–7. Master PMS Schedule

Supervisor at the IMA level for the scheduling of weekly maintenance. The MC will, upon receipt of the updated Master PMS Schedule from the PMS Coordinator, perform the following:

a. Punch the completion date on the master PMS Data Cards

b. Punch the rescheduled date on the Master PMS cards requiring rescheduling

c. Punch the PMS Data Cards for the new 12th week of the Master PMS Schedule

d. Run the listing of the revised Master PMS Schedule

2.2.7.3.2 Use of Master PMS Schedule. The Master PMS Schedule is used as follows:

a. The MC mails the new PMS Data Cards to the PMS Coordinator each Tuesday

b. The MC telecopies the updated Master PMS Schedule to the PMS Coordinator each Tuesday

c. The IMA PMS Coordinator receives the PMS Data Cards and the Master PMS Schedule from the MC

d. The IMA Shop Supervisor reviews the Master PMS schedule and determines from local resources and range requirements, the order in which the maintenance requirements will be performed during the monthly period specified by "DUE DATE".

e. Any rescheduling beyond the monthly period specified by the "DUE DATE" will be noted on the Master PMS Schedule in the "RESC DATE" space. The guidelines to be adhered to in rescheduling maintenance actions are as follows:

(1) The "RESC DATE" may not exceed one half of the normal periodicity of the maintenance requirement. Example: If it has been determined that a MRC with the periodicity of semiannual was scheduled to be completed during the month of 7-77 then the "RESC DATE" cannot exceed a three month period or 10-77.

(2) The "RESC DATE" will be entered on the Master PMS Schedule in black pen by the PMS Coordinator.

(3) An item can only be rescheduled one time and only under the conditions described in (1).

f. The PMS Coordinator enters in black pen the date the action was completed in the "COMP DATE" column.

g. Each Monday the PMS Coordinator telecopies the updated Master PMS Schedule to the MC prior to the end of the working day at NAVTORPSTA.

2.2.7.4 Weekly PMS Schedule. The Weekly PMS Schedule (Figure 2-7) is a display of the planned maintenance scheduled for accomplishment in a given work center during a specific week. A Weekly PMS schedule is kept in each work center and used by the Shop Supervisor to assign and monitor the accomplishment of required PMS tasks by shop personnel.

2.2.7.4.1 Content of Weekly PMS Schedule.

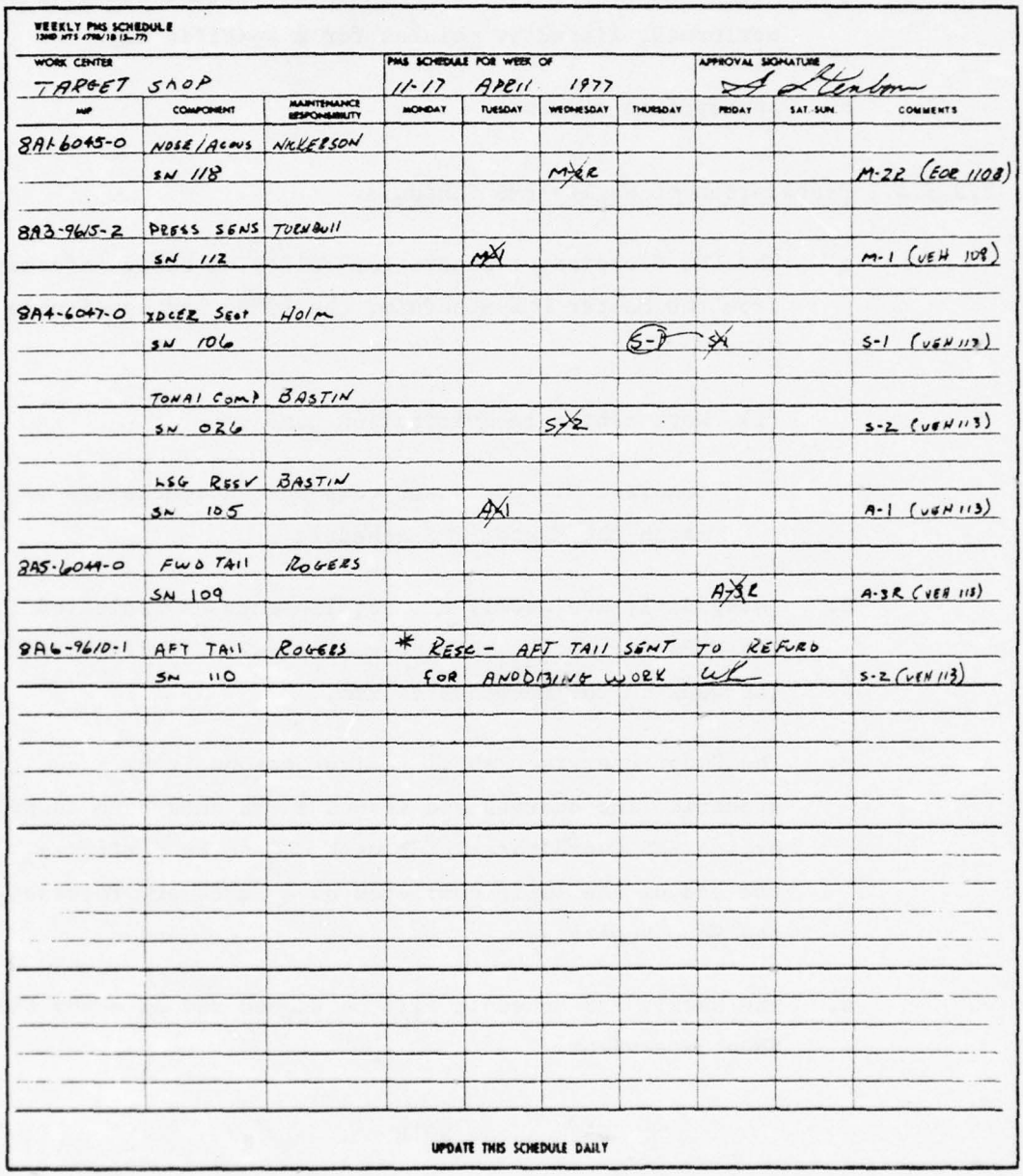
a. Work center name

b. Inclusive dates of current week

c. Shop Supervisors Signature

d. MIP Code

e. A list of applicable components by serial number



WEEKLY PMS SCHEDULE
(NAVMAT NTS 4790/10 (5-77))

WORK CENTER: TARGET SHOP

PMS SCHEDULE FOR WEEK OF: 11-17 APRIL 1977

APPROVAL SIGNATURE: [signature]

MIP	COMPONENT	MAINTENANCE RESPONSIBILITY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SAT-SUN	COMMENTS
8A1-6045-0	NOSE/ACNS	NICKERSON							
	SN 118				M/R				M-22 (EOR 1108)
8A3-9615-2	PRESS SENS	TURNBULL							
	SN 112			M/I					M-1 (VEH 108)
8A4-6047-0	XDCER SEQT	HOLM							
	SN 106					S-1	S/I		S-1 (VEH 113)
	TONAL COMP	BASTIN							
	SN 026				S/2				S-2 (VEH 113)
	LSG RESV	BASTIN							
	SN 105			A/I					A-1 (VEH 113)
8A5-6044-0	FWD TAIL	ROGERS							
	SN 109						A/3L		A-3R (VEH 113)
8A6-9610-1	AFT TAIL	ROGERS	* RESC - AFT TAIL SENT TO REFURB						
	SN 110		FOR ANODIZING WORK				WL		S-2 (VEH 113)

UPDATE THIS SCHEDULE DAILY

Figure 2–8. Weekly PMS Schedule

f. Maintenance responsibilities assigned, by name, to each line item of equipment

g. The periodicity codes of maintenance requirements to be performed, listed by columns for a specific day

h. Appropriate comments

2.2.7.4.2 Preparation of Weekly PMS Schedule.

a. The PMS Coordinator enters the following basic information from the Master PMS Schedule, the LOEP, and applicable MIPs:

(1) Work center identification number

(2) Complete MIP codes and component nomenclature to match the Master PMS Schedule

b. Using daily and weekly PMS requirements as indicated in the MIPs for each work center, list all requirements for the week in the comments column.

c. The Shop Supervisor shall assign personnel, by name, to specific line entries and issues a PMS data card (supplied by the PMS Coordinator) for each MRC to be performed. At the end of the shift completed data cards are returned to the Shop Supervisor.

d. The Weekly PMS Schedule will be signed and dated by the Shop Supervisor

NOTE

MIPs/MRCs must be reviewed to ensure that related maintenance actions are scheduled for the same day and that appropriate consideration is given to the week's operating schedule.

2.2.7.4.3 Use of Weekly PMS Schedule.

a. The Shop Supervisor enters the PMS requirements from the comments column for the week being scheduled to the appropriate day in the Weekly PMS Schedule.

b. The Shop Supervisor crosses off maintenance requirements which have been completed, signs the data cards and turns them over to the PMS Coordinator. Uncompleted maintenance requirements are circled, and rescheduled information is written in the comments column.

c. Every Monday morning the Shop Supervisor turns in the preceding week's PMS schedules, and the completed and uncompleted PMS Data Cards, to the PMS Coordinator who ensures that they agree as follows:

(1) All MRCs completed during the week are crossed out and corresponding PMS Data Cards are completed

(2) MRCs scheduled but not completed during the week are circled.

(3) Any situation requirements which occurred and were completed, but which were not previously scheduled, are entered and crossed out on the schedule and the appropriate PMS Data Card is completed.

d. The PMS Coordinator then reschedules the circled requirements.

e. Every Monday morning the PMS Coordinator will file the completed PMS cards and the rescheduled PMS cards.

f. The PMS Coordinator will ensure that any unscheduled but completed actions are also entered in black pen on the updated Master PMS Schedule.

SECTION 3

PMS DATA COLLECTION PROCEDURE

3.1 INTRODUCTION

Data collection for the Mk 30 Mod 1 Preventive Maintenance System is a function of the Maintenance Coordinator and is utilized to develop the PMS schedules. The data required to maintain a current status control for items requiring preventive maintenance, is drawn from several available sources. The sources are divided into two categories: Equipment status and equipment utilization. The equipment status sources include the PARR Item History and the Logistics Management System and are discussed in paragraphs 3.2.1 and 3.2.2. The equipment utilization sources include the Target In-Water Configuration Listings and the Mk 30 Mod 1 Profile Usage Listings and are discussed in paragraphs 3.2.3 and 3.2.4.

3.2 DATA SOURCES

3.2.1 PARR Item History

PARR (Performance and Reliability Reporting) Item History is a continually generated computerized printout that chronologically lists all historical data pertaining to Mk 30 Mod 1 equipments that have had any maintenance/repair requirements and subsequently been repaired, salvaged, etc.

3.2.2 Logistics Management System

The Logistics Management System is a DATA CARD system which tracks only major assembly items excluding internal serialization. It is generated weekly by NAVTORPSTA Target Logistics and includes the following categories from which the MC can track equipment status/location as an aid in maintenance scheduling:

a. Mk 30 Mod 1 assets in use (Keyport). Lists all assets assigned to the NAVTORPSTA Target Shop IMA for operational use (Figure 3-1).

b. Mk 30 Mod 1 assets in use (Hawaii). Same as above for operational use at NAVTORPSTADET (H) (Figure 3-2).

c. Mk 30 Mod 1 Warehouse "E" Spares. Lists all available RFI (Ready For Issue) spares at NAVTORPSTA (Figure 3-3)

d. Mk 30 Mod 1 assets in use (offsite). Lists all equipments that are at other activities, i.e. Vendors, NUSC (Figure 3-4).

e. Target Mk 30 FIR Repair Status Report. This report lists items by drawing number, nomenclature and serial number that are in the FIR repair cycle. (Figure 3-5) It also shows the date the item was received by supply, the date turned over to FIR, the shop schedule date (SSD), disposition, and status.

f. Mk 30 Mod Shipment Summary. This listing (Figure 3-6) represents Mk 30 Mod 1 hardware items which have been shipped from NAVTORPSTA to other user activities and vendors.

3.2.3 Target In-Water Configuration Listing

This listing (Figure 3-7) is generated as a vehicle is being prepared for range utilization. It consists of a card corresponding to each specific tracked component of the vehicle. The cards are configured into a deck from which a printout is produced. From this listing the PMS Coordinator can track the specific items that are included in the preventive maintenance system.

PAGE 2
MK 30 MOD 1 ASSETS IN-USE (KEYPORT) REPORT OF WEEK ENDING 06/09/77

DRAWING NUMBER	NOMENCLATURE	SERIAL NUMBER	TRAN DATE
2819952-1	LSG PROJECT	048	031077
2819952-1	LSG PROJECT	051	033077
2819952-1	LSG PROJECT	061	031077
2819952-1	LSG PROJECT	070	031077
2819952-1	LSG PROJECT	073	031077
2819952-1	LSG PROJECT	085	031077
			TOTAL-13
2819952-2	LSG COMP	007	031077
2819952-2	LSG COMP	020	033077
2819952-2	LSG COMP	023	032877
2819952-2	LSG COMP	026	031077
			TOTAL-4
2819953	PROJ M.F.	001	032577
2819953	PROJ M.F.	008	031077
2819953	PROJ M.F.	009	033077
2819953	PROJ M.F.	013	032577
2819953	PROJ M.F.	028	031077
2819953	PROJ M.F.	034	030277
2819953	PROJ M.F.	035	030277
2819953	PROJ M.F.	036	033077
2819953	PROJ M.F.	038	031077
2819953	PROJ M.F.	039	031077
			TOTAL-10
2819954	PROJ H.F.	005	033077
2819954	PROJ H.F.	025	033077
2819954	PROJ H.F.	030	032577
2819954	PROJ H.F.	032	031077
2819954	PROJ H.F.	036	031077
2819954	PROJ H.F.	037	031077
2819954	PROJ H.F.	040	031077
2819954	PROJ H.F.	042	032577
			TOTAL-8
2820820	EOR RADIO	101	040877
2820820	EOR RADIO	102	040877
2820820	EOR RADIO	111	040877
2820820	EOR RADIO	115	033077
2820820	EOR RADIO	119	031077
2820820	EOR RADIO	120	030277
			TOTAL-6
2820832	RESERVOIR	001	040877
2820832	RESERVOIR	005	040877
2820832	RESERVOIR	006	042677
2820832	RESERVOIR	101	032577
2820832	RESERVOIR	102	032577
2820832	RESERVOIR	107	032577
2820832	RESERVOIR	110	032577

Figure 3–1. MK 30 MOD 1 Assets In Use (Keyport)

PAGE 4
MK 30 MOD 1 ASSETS IN-USE (HAWAII) REPORT OF WEEK ENDING 06/09/77

DRAWING NUMBER	NOMENCLATURE	SERIAL NUMBER	TRAN DATE
2820820	EOR RADIO	103	040877
2820820	EOR RADIO	104	040577
2820820	EOR RADIO	105	040577
2820820	EOR RADIO	108	040577
2820820	EOR RADIO	109	040577
2820820	EOR RADIO	110	040877
2820820	EOR RADIO	112	040877
2820820	EOR RADIO	113	040577
2820820	EOR RADIO	114	040877
2820820	EOR RADIO	117	040577
2820820	EOR RADIO	122	040877
2820820	EOR RADIO	123	040877
2820820	EOR RADIO	124	040877
2820820	EOR RADIO	125	040877
			TOTAL-14
2820832	RESERVOIR	002	040577
2820832	RESERVOIR	008	040577
2820832	RESERVOIR	011	040877
2820832	RESERVOIR	013	050277
2820832	RESERVOIR	014	040877
2820832	RESERVOIR	016	040877
2820832	RESERVOIR	018	040877
2820832	RESERVOIR	162	040577
2820832	RESERVOIR	164	040577
2820832	RESERVOIR	171	040577
2820832	RESERVOIR	177	040577
			TOTAL-11
2820845	AFT PROP	001	040577
2820845	AFT PROP	017	040577
2820845	AFT PROP	103	040877
2820845	AFT PROP	106	040577
2820845	AFT PROP	108	040877
2820845	AFT PROP	111	040577
2820845	AFT PROP	117	040877
2820845	AFT PROP	119	040877
2820845	AFT PROP	121	040577
2820845	AFT PROP	123	040877
2820845	AFT PROP	125	040877
2820845	AFT PROP	126	040577
2820845	AFT PROP	127	040877
			TOTAL-13
2820846	FWD PROP	012	040577
2820846	FWD PROP	017	040577
2820846	FWD PROP	101	040877
2820846	FWD PROP	110	040877
2820846	FWD PROP	116	040577
2820846	FWD PROP	117	040877
2820846	FWD PROP	121	040877
2820846	FWD PROP	123	040877
2820846	FWD PROP	124	040577
2820846	FWD PROP	125	040577

Figure 3–2. MK 30 MOD 1 Assets In Use (Hawaii)

PAGE 1
MK 30 MOD 1 ASSETS 'E' SPARES REPORT OF WEEK ENDING 06/09/77

DRAWING NUMBER	NOMENCLATURE	SERIAL NUMBER	TRAN DATE	
2146530	INTERFACE	001	032477	A COND
2146530	INTERFACE	002	032477	A COND
2146530	INTERFACE	005	032477	A COND
2146530	INTERFACE	006	032477	A COND
2146530	INTERFACE	006	032477	A COND
2146530	INTERFACE	009	043076	D COND
2146530	INTERFACE	012	032477	A COND
				TOTAL-7
2146540-2	TMG & CNTL	001	032477	A COND
2146540-2	TMG & CNTL	011	032477	A COND
				TOTAL-2
2146565	PWR SUP BD	012	032477	A COND
2146565	PWR SUP BD	018	032477	A COND
2146565	PWR SUP BD	020	032477	A COND
				TOTAL-3
2146565-2	PWR/ACT BD	003	043076	D COND
				TOTAL-1
2146575-1	PWR SUPPLY B	002	050977	E COND
2146575-1	PWR SUPPLY B	010	080576	D COND
				TOTAL-2
2211964-1	CORE MEMORY	003	080576	D COND
2211964-1	CORE MEMORY	005	061076	D COND
2211964-1	CORE MEMORY	013	032477	A COND
2211964-1	CORE MEMORY	014	032477	A COND
2211964-1	CORE MEMORY	020	032477	A COND
				TOTAL-5
2211990-2	CONTROL BD	001	032477	A COND
2211990-2	CONTROL BD	005	043076	D COND
2211990-2	CONTROL BD	023	032477	A COND
2211990-2	CONTROL BD	026	032477	A COND
2211990-2	CONTROL BD	032	032477	A COND
				TOTAL-5
2216118-2	ARITHMETIC	001	032477	A COND
2216118-2	ARITHMETIC	002	032477	A COND
2216118-2	ARITHMETIC	003	032477	A COND
				TOTAL-3
2216118-1	ARITHMETIC	013	043076	D COND
				TOTAL-1

Figure 3–3. MK 30 MOD 1 Warehouse "E" Spares

PAGE 1
MK 30 MOD 1 ASSETS IN-USE (OFF-SITE) REPORT OF WEEK ENDING 06/09/77

DRAWING NUMBER	NOMENCLATURE	SERIAL NUMBER	TRAN DATE		
2819651	DIGTAL G/C	102	093076	BNDX	
2819651	DIGTAL G/C	113	041377	NUSC	
					TOTAL-2
2819652	PRESS SENS	121	041377	NUSC	
					TOTAL-1
2819710	CON/TEST PAN	101	041377	NUSC	
					TOTAL-1
2819721	PERF REC	113	041377	NUSC	
					TOTAL-1
2819760	CASUALTY NTW	120	041377	NUSC	
					TOTAL-1
2819935	RESERVOIR	104	041377	NUSC	
					TOTAL-1
2819952-1	LSG PROJECT	012	041377	NUSC	
2819952-1	LSG PROJECT	022	041377	NUSC	
2819952-1	LSG PROJECT	036	041377	NUSC	
2819952-1	LSG PROJECT	047	041377	NUSC	
					TOTAL-4
2819952-2	LSG COMP	029	041377	NUSC	
					TOTAL-1
2819953	PROJ MF	007	041477	NUSC	
2819953	PROJ MF	016	041377	NUSC	
2819953	PROJ MF	019	041377	NUSC	
2819953	PROJ MF	026	041477	NUSC	
					TOTAL-4
2819954	PROJ H.F.	017	041377	NUSC	
2819954	PROJ H.F.	026	041377	NUSC	
					TOTAL-2
2820820	EOR RADIO	106	041377	NUSC	
					TOTAL-1
2820832	RESERVOIR	175	041377	NUSC	
					TOTAL-1

Figure 3–4. MK 30 MOD 1 Assets In Use (Offsite)

PAGE 2
MK 30 MOD 1 MAJOR ASSEMBLY FIR REPAIR STATUS WEEK ENDING 06/09/77

DRAWING NUMBER	NOMENCLATURE	SERIAL NUMBER	DATE RCVD	LOC	I A	TO FIR DATE	DISPOSITION DATE	CODE	LOC	STATUS
2819952-1	LSG PROJECT	040	112676	A10	X					RMR
2819952-1	LSG PROJECT	042	012877		X	012877				FIR 478/RMR
2819952-1	LSG PROJECT	045	112276	A10	X					NEED PTV AUTH
2819952-1	LSG PROJECT	049	012877		X	012877				FIR 478
2819952-1	LSG PROJECT	054	072876	A9	X					ENG DECIS
2819952-1	LSG PROJECT	056	072876	A9	X					ENG DECIS
2819952-1	LSG PROJECT	060	051076		X	040777				FIR 478/RMR
2819952-1	LSG PROJECT	065	051076		X	040777				FIR 478/RMR
2819952-1	LSG PROJECT	072A	011077		X	032177				FIR 478/TEST
2819952-1	LSG PROJECT	074	111876	A9	X					RMR
2819952-1	LSG PROJECT	079	081676		X	081676				FIR 478/RMR
2819952-1	LSG PROJECT	080	081676	A10	X					ENG DECIS
2819952-1	LSG PROJECT	081	051076		X	040777				FIR 478/RMR
2819952-1	LSG PROJECT	082	110876	A9	X					ENG DECIS
2819952-1	LSG PROJECT	083A	011077	A10	X					RMR
2819952-1	LSG PROJECT	086	050476	A9	X					ENG DECIS
2819952-1	LSG PROJECT	087	112276	A10	X					ENG DECIS
2819952-1	LSG PROJECT	088	052377	A9	X					RMR
2819952-1	LSG PROJECT	089	051076		X	040777				FIR 478/RMR
2819952-1	LSG PROJECT	090	101476	A10	X					RMR
2819952-1	LSG PROJECT	093	052377	A9	X					RMR
2819952-1	LSG PROJECT	096	081676	A9	X					ENG DECIS
2819952-1	LSG PROJECT	097A	052176		X	032177				FIR 478/TEST
							TOTAL-32			
2819952-2	LSG COMP	008	042074		X	042074				FIR 478/RMR
2819952-2	LSG COMP	009	012877		X	012877				FIR 478/RMR
2819952-2	LSG COMP	012	1202		X	050477				FIR 478/RMR
2819952-2	LSG COMP	013	061276		X	061276				FIR 478/RMR
2819952-2	LSG COMP	014	052477		X	060277				FIR 478/RMR
2819952-2	LSG COMP	016	050977		X	051877				FIR 478/RMR
2819952-2	LSG COMP	018	012877		X	012877				FIR 478/RMR
2819952-2	LSG COMP	019	052077	A10	X					RMR
2819952-2	LSG COMP	021	020277	C11	X					RMR
2819952-2	LSG COMP	025	051977	A10	X					RMR
2819952-2	LSG COMP	027	030477	A10	X					RMR
2819952-2	LSG COMP	028	052477		X	060277				FIR 478/RMR
							TOTAL-12			
2819953	PROJ M.F.	010	081676		X	081676				FIR 478/RMR
2819953	PROJ M.F.	011	061576		X	061576				FIR 478/RMR
2819953	PROJ M.F.	012	081676		X	081676				FIR 478/RMR
2819953	PROJ M.F.	022	061576		X	061576				FIR 478/RMR
2819953	PROJ M.F.	042	020376		X	020376				FIR 478/RMR
							TOTAL-5			
2819954	PROJ H.F.	006	081676		X	081676				FIR 478/RMR
2819954	PROJ H.F.	009	061576		X	061576				FIR 478/RMR
2819954	PROJ H.F.	010	061576		X	061576				FIR 478/RMR
2819954	PROJ H.F.	011	051976		X	051976				FIR 478/RMR
2819954	PROJ H.F.	022	081676		X	081676				FIR 478/RMR
							TOTAL-5			

Figure 3–5. Target MK 30 FIR Repair Status Report

PAGE 1
MK 30 MOD 1 SHIPMENT SUMMARY

DATE FROM 06/13/77 DATE TO 06/17/77

DRAWING NUMBER	NOMENCLATURE	SERIAL NUMBER	TRAN DATE	SITE	REQ. NO.	TYPE SHMT	REMARKS
1223204-1	UDDS RECD	2684	061577	C/90	529	EMERG	YM557
						TOTAL-1	
1223204-2	UDDS RECD	2695	061577	C/90	529	EMERG	COMMERCIAL AIR
						TOTAL-1	
1348266	BAT MODULE	181		C/90	520	QUI-TRANS	COMMERCIAL AIR
1348266	BAT MODULE	182		C/90	520	QUI-TRANS	COMMERCIAL AIR
1348266	BAT MODULE	183		C/90	520	QUI-TRANS	COMMERCIAL AIR
1348266	BAT MODULE	184		C/90	520	QUI-TRANS	COMMERCIAL AIR
1348266	BAT MODULE	185		C/90	520	QUI-TRANS	COMMERCIAL AIR
1348266	BAT MODULE	186		C/90	520	QUI-TRANS	COMMERCIAL AIR
1348266	BAT MODULE	187		C/90	520	QUI-TRANS	COMMERCIAL AIR
						TOTAL-7	
2217347-1	MONITOR CD	006		BNDX	526	ROUTINE	
						TOTAL-1	
2217374-1	GYRO	031		BNDX	526	ROUTINE	
2217374-1	GYRO	105	052477	BNDX		ROUTINE	
						TOTAL-2	
2217374-2	GYRO	100	051877	BNDX		ROUTINE	
						TOTAL-1	
2819331	PAD	10 EA		C/90	517	QUI-TRANS	COMMERICAL AIR
						TOTAL-1	
2819651	DIGTAL G/C	104	060277	C/90	516	EMERG	YM563
2819651	DIGTAL G/C	109	061577	C/90	529	EMERG	YM613
2819651	DIGTAL G/C	114	060677	C/90	518	EMERG	YM567
2819651	DIGTAL G/C	118	060277	C/90	516	EMERG	YM567
						TOTAL-4	
2819652	PRESS SENS	103	061577	C/90	529	EMERG	YM630
						TOTAL-1	
2819721	PERF RECD	104	061577	C/90	529	EMERG	YM622
2819721	PERF RECD	120	061577	C/90	529	EMERG	YM622
						TOTAL-2	
2819760	CASUALTY NTW	113	061077	C/90	525	EMERG	COMMERCIAL AIR
						TOTAL-1	
2819952-1	LSG PROJECT	006	052777	C/90	507	EMERG	YM566

Figure 3–6. MK 30 MOD 1 Shipment Summary

PAGE 1

INWATER CONFIGURATION PARR NO 160547 RUN DATE 04/18/77

RUN PLAN NO 3664 TARGET NO 73113 PREP 046 RUN 043Z

CCN	REF DES	NOMENCLATURE	SER NO	DRAWING NO	DMCO	DMCO	DMCO	DTO	DTO	DTO
001	8	TGT MK 30 MOD 1	73113	2821001						
101	8A1	NOSE/ACOUS HULL	116	2821031						
102	1A1	ELEC ASY ACOUS	113	3134430				A131		
103	1A2	PWR AMP AC TOP	109	3134410						
104	1A3	PWR AMP AC BOT	106	3134400						
105	1A5	CAPACITOR BANK	112	3134690						
106	4BT1	EOR BATTERY	118B	2819301						
201	8A2	BATT HULL SECT	107	2821032						
202	2BTOA	AG-ZN BAT ASY	110C	2819689						
301	8A3	G/C HULL	113	2821033						
302	1A4	ROM PAYLD PROG	109	3134600						
303	2A1A	APU BOTTOM ASY	105	3134900						
304	2A1B	APU TOP ASY	112	3134800				A154		
305	3A1	DIGITAL G/C ASY	117	2819651						
306	3A3	PRESS SENS SUB	119	2819652						
307	5A1	CASUALTY NTWRK	106	2819760				A168		
308	7A1	PERF RECORDER	113	2819721				A104		
309	7A3	UDDS RECORDER	107	2988998				A104		
401	8A4	XDCR HULL SECT	112	2821034						
402	8A4A1	LSG COMP	106	2819952-2						
403	1A6A	PROJ HF PORT	016	2819954						
404	1A6B	PROJ HF STBD	011	2819954						
405	1A7A	PROJ MF PORT	015	2819953						
406	1A7B	PROJ MF STBD	014	2819953						
407	1A8A	LSG PROJ P U	026	2819952-1						
408	1A8B	LSG PROJ S U	022	2819952-1						
409	1A8C	LSG PROJ P L	027	2819952-1						
410	1A8D	LSG PROJ S L	021	2819952-1						
411	1A9	ATAT TUNE NTWK	118	3135220						
412	1A10	RESERVOIR	109	2819935						
501	8A5	FWD TAIL HULL	106	2821035						
502	2A2	SS LOG ASSY	114	2820928						
503	2A3	PWR SWITCH ASY	116	2820991						
504	2A4	PWR SWITCH CON	118	2820950						
505	2A5	AUX PWR SUPPLY	117	2820980						
506	2B1	107 HP MOTOR	7352-1	2820850						
507	4A1	EOR RADIO SYS	111	2820820						
508	4A1A2	PRESS RESERVOIR	109	2820832						
601	8A6	AFT TAIL HULL	106	2821036						
602	8A6A1	SHAFT BRG-SEAL	127	2820852						
603	5S1	LANYARD SWITCH	115	2820854						
604	W702	CABLE ASY SKEG	153	3134597						
605	1A11	TOWED ARRAY	E103A	2819850						

Figure 3–7. Target In-Water Configuration Listing

3.2.4 Target Mk 30 Mod 1 Profile Usage Listing

This listing is generated as part of the Run Program for the applicable exercise and provides a VT and DVT listing (Figure 3-8) of the cumulative VT (Velocity X time) and DVT (Depth X velocity X time) by run frame of the Run Program. The PMS Coordinator computes the target actual run time from the Target Firing Report (Figure 3-9) into tenths of hours and enters the corresponding figure from the VT sum columns of the profile in the 107 HP Motor Log (Figure 3-10) and the corresponding figure from the DVT sum column in the Shaft Bearing Seal Log (Figure 3-11).

3.3 PMS LOGS

The PMS Logs are maintained on a run by run basis by the PMS Coordinator and are sent to the MC at the end of each month.

3.3.1 107 HP Motor VT Log

The log (Figure 3-10) is divided into 10 columns:

Col. 1. Run Plan-Prof/Time: From target firing report (Figure 3-9)

Col. 2. Date: Date of run. From target firing report (Figure 3-9)

Col. 3. Run #: From target firing report (Figure 3-9)

Col. 4. TGT S/N: From target firing report (Figure 3-9)

Col. 5. Sect S/N: From in-water configuration listing (Figure 3-7)

Col. 6. Run Time (TxV): From target firing report (Figure 3-9) and profile VT and DVT listing (Figure 3-8)

Col. 7. Cum. Time: From VT and DVT Listing (Figure 3-8)

Col. 8. Time to PM: Cumulative Time Subtracted from 1000

Col. 9. MRC Performed: From MIP

Col. 10. Remarks: Any pertinent information i.e.: "MRC performed due to removal of motor for other non-related failures."

3.3.2 Shaft Bearing and Seal DVT Log

The log (Figure 3-11) is also divided into ten columns. The headings and data sources are identical to the 107 HP Motor VT Log with the exceptions that the run time column is composed of "DVT", and the "Time to PM" is the cumulative time subtracted from 150,000.

3.3.3 Target Log

By utilizing the previously mentioned sources of information, the PMS Coordinator is able to maintain a current location and action log for all items covered by the PMS. The Target Log (Figure 3-12) is kept on a run by run basis by extracting the items from the configuration listing (Figure 3-7). From this log the PMS Coordinator can schedule situational MRCs such as EOR battery removal etc.

3.4 PMS TREND DATA

At Maintenance Management option, trend data records will be established and maintained for designated equipment. The purpose of this data is to record historical wear or degradation measurement data through time. PMS trend data sheets will be supplied through the PMS coordinators.

RUN PLAN 77-3413-2 PROFILE NO. 3

FRAME NO	EOF TIME	VT	DVT	VT SUM	DVT SUM
2.00	0.02	0.17	8.33	0.17	8.33
3.00	0.08	1.19	59.44	1.36	67.78
4.00	0.11	0.63	31.67	1.99	99.44
5.00	0.14	0.63	31.67	2.62	131.11
6.00	0.17	0.63	31.67	3.26	162.78
7.00	0.20	0.63	31.67	3.89	194.44
8.00	0.23	0.63	31.67	4.52	226.11
9.00	0.27	0.63	31.67	5.16	257.78
10.00	0.30	0.63	31.67	5.79	289.44
11.00	0.33	0.63	31.67	6.42	321.11
12.00	0.36	0.63	31.67	7.06	352.78
13.00	0.39	0.63	31.67	7.69	384.44
14.00	0.45	1.11	55.56	8.80	440.00
15.00	0.46	0.25	12.50	9.05	452.50
16.00	0.47	0.09	4.44	9.14	456.94
17.00	0.49	0.14	6.81	9.27	463.75
18.00	0.55	0.45	22.36	9.72	486.11
19.00	0.56	0.09	4.38	9.81	490.49
20.00	0.58	0.12	6.03	9.93	496.51
21.00	0.59	0.13	6.25	10.06	502.76
22.00	0.62	0.25	12.50	10.31	515.26
23.00	0.74	1.18	59.03	11.49	574.29
24.00	0.75	0.13	6.25	11.61	580.54
25.00	0.83	0.83	41.67	12.44	622.21
26.00	0.85	0.23	11.46	12.67	633.67
27.00	0.86	0.26	12.99	12.93	646.65
28.00	0.87	0.14	7.08	13.07	653.74
29.00	0.87	0.04	2.22	13.12	655.96
30.00	0.88	0.12	5.83	13.24	661.79
31.00	0.90	0.20	10.00	13.44	671.79
32.00	0.92	0.20	10.00	13.64	681.79
33.00	0.93	0.20	10.00	13.84	691.79
34.00	0.94	0.13	6.25	13.96	698.04
35.00	0.95	0.13	6.67	14.09	704.71
36.00	0.97	0.40	20.00	14.49	724.71
37.00	0.99	0.30	15.00	14.79	739.71
38.00	1.00	0.08	4.17	14.88	743.88
39.00	1.02	0.24	12.22	15.12	756.10
40.00	1.05	0.37	18.33	15.49	774.43
41.00	1.08	0.31	15.28	15.79	789.71
42.00	1.10	0.15	7.50	15.94	797.21
43.00	1.11	0.22	10.83	16.16	808.04
44.00	1.13	0.25	12.50	16.41	820.54
45.00	1.15	0.25	12.50	16.66	833.04
46.00	1.16	0.25	12.50	16.91	845.54
47.00	1.18	0.13	6.67	17.04	852.21
48.00	1.22	0.33	16.67	17.38	868.88
49.00	1.24	0.13	6.67	17.51	875.54
50.00	1.25	0.13	6.67	17.64	882.21
51.00	1.27	0.14	7.22	17.79	889.43
52.00	1.29	0.13	6.67	17.92	896.10
53.00	1.31	0.13	6.67	18.06	902.76
54.00	1.32	0.13	6.67	18.19	909.43
55.00	1.46	1.11	55.56	19.30	964.99
56.00	1.52	0.44	22.22	19.74	987.21
57.00	1.57	0.39	19.44	20.13	1006.65
58.00	1.71	0.97	48.61	21.11	1055.26
59.00	1.85	0.97	48.61	22.08	1103.88
60.00	1.99	0.97	48.61	23.05	1152.49

Figure 3–8. Target MK 30 MOD 1 Profile Usage Listing

MARK 27/30

TARGET FIRING REPORT NO. _____ 1. REG. 73113 RUN 342

NTS 8510-30/19(2/75)

2. MK 30 MOD 1	3. RUN PLAN NO. 76-3670	4. RNG. SEQ. NO. 1204
5. TYPE EXER. ATTACKEX	6. INHIBIT LT X HS _____	7. ACL 1 ___ 10 X
8. DCO (FINE/CORS) 1000/1050	9. PRESET RUN TIME 120	10. MAD ON X OFF ___
11. CAS.OVERRIDE: NONE, ACOUS, P&P, G&C, (MAD), HULL		12. TONALS ON X OFF ___
13. TORP (TGT.MODE) ACTIVE	PASS. NOISE LEVEL OFF	TGT. SIZE 20
14. SONAR (TGT.MODE) COMB	PASS. NOISE LEVEL 40	TGT. SIZE 30
15. LAUNCH CRAFT 1X308 SPEED MIN ACTIVITY NANOOSE		16. FIRING DATE 10-19-76
17. TYPE LAUNCH: RACK, (TUBE), HELO	18. # ACL CMD SENT 3 RCVD 3	19. TOF 1431
20. EOR CASUALTY NONE	21. ENABLE TIME 1 MIN 2 SEC	22. ACTUAL RUN TIME 86'

23. MATERIAL SUBSYSTEM	EVALUATION	24. FAILURE COMMENTS, PARR NUMBER, CATEGORY
P & P	S	In- Water Parr 159388
G & C	S	Roms A-32, B-68
ACOUSTICS	S	Profile 2
MAD	S	In-Warm Time 3 MIN 22 SEC
ACL	S	
AUXILLARY	S	
TOWED ARRAY	S	
CASUALTY	S	
EOR	S	

25. SENSOR SYSTEM EXERCISED: MAD, SONAR, WEAPON	SENSOR ACOUS. MODE	FIRING CRAFT	SENSOR REG. NO.	FREQ. BAND	SENSOR TOF	SENSOR EVALUATION
1.						
2.						
3.						
4.						
5.						

26. COMMENTS

TARGET RAP · 3 TORPS ATTACKED (MK·46)

27. TGT. PREP. ACTIVITY: NANOOSE

28. REPORT PREPARED BY: Otto Schmidtke DATE: 10-19-76

Figure 3–9. Target Firing Report

(8A5) (2B1) 107 HP MOTOR
NTS 8580-30/94B (6-77)

(S/N 7158-2)

RUN PLAN / PROFILE / TIME	DATE	RUN #	TGT S/N	SECT S/N	RUN TIME (T×V)	CUM. TIME	TIME TO PM	MRC PERFORMED	REMARKS
3664-2 116	9-16-76	29Z	73113	118	13.28	13.28	986.72		
3655-3 107	9-22-76	30Z	73113	118	19.82	33.10	966.90		
3666-2 68	9-29-76	31Z	73113	118	27.01	60.11	939.89		
3667-2 121	10-6-76	32Z	73113	118	24.69	84.80	915.20		
3657-2 93	10-15-76	33Z	73113	118	21.16	105.96	894.04		
3670-2 86	10-19-76	34Z	73113	118	16.37	122.33	877.67		
3664-3 116	10-28-76	35Z	73113	118	13.28	135.61	864.39		
3656-3 74	11-03-76	36Z	73113	118	9.14	144.75	855.25		

Figure 3–10. 107 HP Motor VT Log

(8A6A1) SHAFT BEARING AND SEAL ASSEMBLY (S/N 120)

NTS 8580-30/94C (6-77)

RUN PLAN PROFILE / TIME	DATE	RUN #	TGT S/N	SECT. S/N	RUN TIME (D×T×V)	CUM. TIME	TIME TO PM	MRC PERFORMED	REMARKS
3668-2 67	9-09-76	31Z	73112	116	13505.83	13505.83			Removed for use in 73113 9-11-76
3664-2 116	9-16-76	29Z	73113	108	9928.25	23434.08			
3655-3 107	9-22-76	30Z	73113	108	4206.92	27641.00			
3666-2 68	9-29-76	31Z	73113	108	7967.50	35608.50			
3667-2 121	10-6-76	32Z	73113	108	3098.50	38707.00			
3657-2 93	10-15-76	33Z	73113	108	4271.35	42978.35			
3670-2 86	10-19-76	34Z	73113	108	3992.60	46970.95			
3664-3 116	10-28-76	35Z	73113	108	10831.43	57802.38			
3656-3 74	11-03-76	36Z	73113	108	7835.67	65638.05			

Figure 3–11. Shaft Bearing and Seal DVT Log

MK 30 -- TARGET SERIAL NUMBER 73113

NTS 8580-30, 94A (6-77)

DATE	9-16-76	9-22-76	9-29-76	10-06-76	10-15-76	10-19-76	10-28-76	11-03-76			
RUN #	29Z	30Z	31Z	32Z	33Z	34Z	35Z	36Z			
NOSE ACOUS	116	116	116	116	116	116	116	116			
EOR BATT	114C	114C	114C	118B	118B	118B	1108	1108			
BATT HULL	113	117	117	113	113	108	112	117			
MAIN BATT	005	001	001	004	113	005	103	001			
G&C HULL	113	113	113	113	113	113	113	113			
PRESS SENS	114	114	114	114	114	109	109	109			
XDCR HULL	112	112	112	112	106	106	106	106			
LSG COMP	020	020	020	020	027	027	027	027			
LSG RESV	010	010	010	010	012	012	012	012			
FWD TAIL HULL	118	118	118	118	118	118	118	118			
107 HP MOTOR	7158-2	7158-2	7158-2	7158-2	7158-2	7158-2	7158-2	7158-2			
PRESS RESV	005	169	006	001	164	175	005	001			
AFT TAIL HULL	108	108	108	108	108	108	108	108			
SHAFT BRNG	120	120	120	120	120	120	120	120			
TOWED ARRAY	E113A	191AE	E107A	E108A	E103A	147AE	215AE	217AE			
RPG/PROFILE	3664-2	3655-3	3666-2	3667-2	3657-2	3670-2	3664-3	3656-3			
RUN TIME	116	107	68	121	93	86	116	74			

Figure 3–12. Target Log

DISTRIBUTION

	Copy
NAVSEASYSCOM	
SEA662C	1
NUSC, Newport	
(3692)	2-3
DDC	4-5
NAVTORPSTA	
2688	6-7
4023	8
505	9
523	10-14
90	15-21
0115	22-26